GENERAL INDEX

(*a*) indicates an abstract.

Indexes of Authors' Names and Participants in Discussions are given separately.

Administration, Address on: R. G. Huxtable (*a*) . . . 627
Allocation of Resources in Britain's Fuel Industries: W. Hodkinson (*a*) . . . 311
American Visit, Retrospect on an: G. B. Scott (*a*) . . . 151
Ammoniacal Liquors, Production, Treatment and Disposal of: E. T. Pickering (*a*) . . . 306
Analysis of Oils for Gas Manufacture: A. B. Densham *and* P. A. A. Beale . . . 349
Discussion and Authors' Reply . . . 358
Analytical Techniques in Gas Industry, Applications of Modern: Part I: Analysis of "Primary Flash Distillate" Feedstock, using Gas Chromatography: A. L. Roberts *and* C. P. Ward . . . 343
99th Annual General Meeting, 1962, Report . . . 398
Arrangements for Binding the Journal . . . 784
9th Arthur Duckham Research Fellowship . . . 23
27th Autumn Research Meeting, 1961:
Report . . . 43
Luncheon . . . 46

Battersby, T. C.:
Biographical Notes and Portrait . . . 387
New Year Message from President . . . 1
Presidential Address, 1962 . . . 388
Benevolent Fund, General Meeting, 1962 . . . 413
Binding the Journal, Arrangements for . . . 784
Biographical Notes of Authors 42, 135, 227, 312, 380, 492, 562, 633, 663, 745, 792
Birmingham Medal: 1962 Award . . . 399
Branson, W. R. Biographical Notes and Portrait . . . 387
British Railways—Problem and Answer: R. C. Hilton (*a*) 306
Business as (Un)usual: H. Dobson *and* C. G. Partington (*a*) . . . 378
Butane/Air Mixture, District Supply by means of: N. J. Wilson (*a*) . . . 237
Butane for Peak Loads at East Greenwich, Use of: J. C. Bailey (*a*) . . . 424
Butane, Transfer, Use and Reforming of: J. A. Ward (*a*) 424

Central Laboratories of South Eastern Gas Board: G. H. Fuidge (*a*) . . . 422
Chairman's Address, 1962 (I.G.E. Eastern Section): K. B. Meggitt (*a*) . . . 556
Chairman's Address, 1962 (I.G.E. London and Southern Section): R. M. Farror (*a*) . . . 496
Chairman's Address, 1962 (I.G.E. Midland Section): E. T. Pickering (*a*) . . . 421
Chairman's Address, 1962 (I.G.E. North of England Section): K. E. Brown (*a*) . . . 496
Chairmen's Technical Committee: 1960-61, *22nd* Report 16
Discussion and Chairman's Reply . . . 37
Charles Hunt Memorial Medals: New Regulations . . . 78
Christmas Lectures for Young People . . . 136, 737
Code of Practice for Safe Opening of Gas Works Plant (I.G.E. Safety Recommendation M12) . . . 27
Codes of Practice Sub-Committee, Report . . . 19
"Coke and the Future", Joint Meeting on . . . 800
Continuous Catalytic Reforming of Butane by the Otto Process, Reflections: S. G. Vane *and* J. E. Morris . . . 689
Cork, O.N.I.A.-G.E.G.I. Plant in: T. E. Dunphy . . . 749
Council of the Institution:
New Members, Biographical Notes of . . . 490
Nomination of Ordinary Members . . . 57, 153
Officers, 1961-62 . . . 2
Officers, 1962-63 . . . 386
Proceedings . . . 42, 226, 303, 365, 414, 545, 734, 783
Customer Service, the Development of Modern Methods: L. R. Hodge . . . 715

3rd Dempster Travelling Fellowship . . . 24
Report (Abridged) . . . 429

Description and Comparison of Single- and Multi-stage Turbo-boosters Installed at Stretford Holder Station: K. R. Eaves (*a*) . . . 237
Determination of Stresses in Buried Pipes: H. H. Collins, G. N. J. Gilbert *and* R. Rew . . . 245
Discussion and Authors' Reply . . . 270
Development of Modern Methods of Customer Service: L. R. Hodge . . . 715
Discussion and Author's Reply . . . 729
Development of the Gas Load: W. G. Phillips . . . 637
Discussion and Author's Reply . . . 657
Developments in Industrial Gas Utilization on the Continent (*3rd* Dempster Travelling Fellowship Report: Abridged): E. Thornton . . . 429
Distribution Design—Domestic Peak Loads (Medium and Small Dwellings): W. H. B. Porter (*a*) . . . 741
District Sections and Affiliated Associations:
Abstracts and Discussions of Papers 53, 144, 232, 306, 373, 421, 496, 556, 627, 686, 740, 795
Notes of Meetings 52, 143, 231, 305, 371, 419, 494, 553, 626, 739, 793
Officers . . . 66, 158, 244, 318, 428, 636, 688, 748
District Supply by Means of Butane/Air Mixture: N. J. Wilson (*a*) . . . 237
Domestic Heat Services in Occupied Houses: J. A. Harris *and* D. R. Wills . . . 107
Discussion and Authors' Reply . . . 127

Electrical Bonding, *Ad hoc* Committee on, Report . . . 23
Engineering Institutions Joint Council . . . 738
Examinations, 1963 . . . 738
Exhibition of Paintings and Drawings . . . 418
Exothermic Atmospheres, Control of Lean (Generation of Heat-treatment Atmospheres from Town Gas): P. A. Cubbage *and* J. L. Whiteside . . . 86
Experience with Installing Warm Air Heating in Existing Houses: F. S. Eames (*a*) . . . 151
Experiences in New Applications of Gas for Space Heating: N. R. Junkison *and* D. MacIntyre (*a*) . . . 375

Factors Influencing Choice of Motive Power: H. F. Buxton (*a*) . . . 373
Fifty Years of Industrial Gas in Birmingham: J. Ellis, K. Manuel *and* L. Walker . . . 596
Discussion and Authors' Reply . . . 621
Flash Tube Design: A. M. Kitson *and* J. A. Prigg . . . 277
Discussion and Authors' Reply . . . 298
Forces in Meters: C. P. Henshilwood *and* A. E. Sharman 319
Discussion and Authors' Reply . . . 337
Forthcoming Meetings 61, 153, 239, 314, 381, 426, 493, 632, 683, 743, 801
Fuel Industries, Allocation of Resources in Britain's: W. Hodkinson (*a*) . . . 311
Further Industrial Gas Developments in South West: T. H. Pardoe (*a*) . . . 559

Gas Boosters and Compressors, Control and Installation: H. Watts *and* H. Bonnans (*a*) . . . 686
Gas Chromatography, Analysis of "Primary Flash Distillate" Feedstock, Using (Applications of Modern Analytical Techniques in Gas Industry: Part I): A. L. Roberts *and* C. P. Ward . . . 343
Gas Council Research Scholarships: 1961, Report on . . . 395
Gas Distribution Committee, Report . . . 20
Gas Education Committee, 1960-61: *38th* Report . . . 67
Discussion and Chairman's Reply . . . 82
Gas-fuelled Heat Services in Operation: Local Authority and Private Development Housing: R. D. Bruce (*a*) . . . 234
Gasholder, Repairing Water Tank of a Spiral-guided: K. J. Shewan (*a*) . . . 238
Gasification Processes (Joint Conference with Institute of Fuel, 1962) . . . 552, 786
Gas in the Textile Industry: H. Hocking (*a*) . . . 497

Gas Load, Development: W. G. Phillips 637
Gas Reservoirs in British Porous Rock Structures: C. Johnson 159
Discussion and Author's Reply 178
Gas Technology, Short Course for Teachers, Norwich, 1962 230
Gas Utilization Engineers, Short Refresher Course for, Oxford, 1962 368
Gas Works Effluents Committee, Report 21
Gas Works Safety Rules Committee, Report 21
Gasification Processes, Joint Conference on 786
General Notices 64, 156, 242, 316, 383, 427, 500, 563, 634, 687, 747, 803
Generation of Heat-treatment Atmospheres from Town Gas. Control of Lean Exothermic Atmospheres: P. A. Cubbage *and* J. L. Whiteside 86
Discussion and Authors' Reply 100
Getting Warmer: J. Bell (*a*) 55
Glass Industry in South Lancashire Group of the North Western Gas Board, Town Gas in: K. D. Hooper (*a*) . 308

Haffner, A. E. Biographical Notes and Portrait 385
Heat Services in Occupied Houses, Domestic: J. A. Harris *and* D. R. Wills 107
Heat Services in Operation, Gas-fuelled: Local Authority and Private Development Housing: R. D. Bruce (*a*) . 234
Heat-treatment Atmospheres from Town Gas, Generation of: Control of Lean Exothermic Atmospheres: P. A. Cubbage *and* J. L. Whiteside 86
History of The Institution of Gas Engineers 140

Incineration: E. J. Bell (*a*) 377
Industrial Appliances to Gas Firing, Some Examples of Conversion of: G. Holmes (*a*) 236
Industrial Gas Developments in the South West, Further: T. H. Pardoe (*a*) 559
Industrial Gas in Birmingham, Fifty Years of: J. Ellis, K. Manuel *and* L. Walker 596
Industrial Gas Sales, Pattern of Development for Advancement of: K. Manuel (*a*) 629
Industrial Gas Utilization on the Continent, Developments in: E. Thornton 429
Initial Experience in Operation of M.S. Plant: W. J. Spiller (*a*) 557
Institution Bronze Medal: 1961 Award. *See also* Chance, P. R. *and* Dance, E. W. G. 399
Institution Examination, Qualifications for Entry . . . 78
Institution Gas Research Fellowship 24
Institution Gold Medal: 1961 Award 399
Institution Register 58, 156, 230, 312, 370, 415, 493, 551, 626, 682, 746, 792
Institution Silver Medal: 1961 Award. *See also* Jackson, P. G. *and* Olden, M. J. F. 399
Instruments in Production and Distribution of Gas, Use of: J. R. Kenward *and* T. A. Lucas 144
International Gas Union:
Committee on Production of Manufactured Gases . 140
Meeting of Council, 1962 735

H. E. Jones London Medal: 1961 Award 399
Joint Conference on Gasification Processes 786
Joint Meeting on "Coke and the Future" 800
Journal of The Institution of Gas Engineers:
Publication of 57
Arrangements for Binding 784
Junior Gas Associations: Abstracts of Papers and Notes of Meetings. *See* District Sections and Affiliated Associations

Knowing Our Markets: M. R. Bone (*a*) 374

Laboratory and Field Experience in Warm-air Heating: P. R. Chance *and* E. W. G. Dance (Bronze Medal Award, 1961) 517
Library Accessions 57, 155, 238, 313, 380, 418, 491, 562, 625, 685, 745, 784
Light Petroleum Distillates in Low-pressure Gasification Plants, Memorandum on Installations for Use of (Amendment to I.G.E. Safety Recommendation M9) . 24
Long-distance Transmission and Underground Storage: K. Bentz 565
Discussion and Author's Reply 591
Markets, Knowing our: M. R. Bone (*a*) 374
Mechanical Handling Plant, Safe Operation of: R. W. Cutts (*a*) 149
Meters Committee, Report 22
Meters, Forces in: C. P. Henshilwood *and* A. E. Sharman 319
Mind Your Own Business: R. J. Gregg (*a*) 233
Mine Gas as Constituent of Town Gas: G. F. Cole (*a*) . 309
Motive Power, Factors Influencing Choice of: H. F. Buxton (*a*) 373
M.S. Plant, Initial Experience in Operation of: W. J. Spiller (*a*) 557

News from Gas Industry Overseas 56, 141, 227, 303, 366, 417, 499, 549, 631, 680, 735, 785

Obituary:
Dempster, Charles 545
Falmouth, The Rt. Hon. The Viscount 229
Hartley, Dr. Harold 681
Whitehead, Sidney Edward 139
Oils for Gas Manufacture, Analysis of: A. B. Densham *and* P. A. A. Beale 349
O.N.I.A.-G.E.G.I. Plant in Cork: T. E. Dunpny . . . 749
Discussion and Author's Reply 760
Organic Sulphur Compounds, Removal from Town Gas: C. E. Mills *and* E. Johnson 664
Otto Process, Continuous Catalytic Reforming of Butane by the: S. G. Vane *and* J. E. Morris 689
Oxy-gas Cutting, Place of Town Gas in: R. L. Nuttall (*a*) 237

Pattern of Development for Advancement of Industrial gas Sales: K. Manuel (*a*) 629
Personal Notes 51, 142, 229, 313, 370, 414, 498, 548, 633, 682, 746, 791
Pipes, Determination of Stresses in Buried: H. H. Collins, G. N. J. Gilbert *and* R. Rew 245
Place of Town Gas in Oxy-gas Cutting: R. L. Nuttall (*a*) 237
Planning, Some Experiences in: E. O. Rose 764
President, 1961-62. *See* Battersby, T. C.
President, 1962-63. *See* Haffner, A. E.
Presidential Address, 1961 (Eastern Junior Gas Association): R. E. P. Hoskin (*a*) 377
Presidential Address, 1962 (Northern Junior Gas Association): L. Nelson (*a*) 561
President's Luncheon 406
"Primary Flash Distillate" Feedstock, Analysis of, using Gas Chromatography (Applications of Modern Analytical Techniques in Gas Industry: Part 1): A. L. Roberts *and* C. P. Ward 343
Production, Treatment and Disposal of Ammoniacal Liquors: E. T. Pickering (*a*) 306
P.V.C. for Pipes Carrying Town Gas, Suitability of: W. F. Gardner *and* I. Kalushner 184

Reflections on the Continuous Catalytic Reforming of Butane by the Otto Process: S. G. Vane *and* J. E. Morris 689
Discussion and Authors' Reply 657
Refractories Research Committee: 1960-61, *52nd* Report of Joint 449
Discussion and Chairman's Reply 462
Refresher Course for Gas Utilization Engineers, Oxford, 1962 368
Remote Control and Indication at Blyth: R. R. Parr (*a*) . 238
Removal of Organic Sulphur Compounds from Town Gas: C. E. Mills *and* E. Johnson 664
Discussion and Authors' Reply 674
Repairing Water Tank of a Spiral-guided Gasholder: K. J. Shewan (*a*) 238
Research of the Gas Industry: Sir Charles Ellis 3
Discussion and Author's Reply 12
Retrospect on an American Visit: G. B. Scott (*a*) . . . 151
Rock Structures, Gas Reservoirs in British Porous: C. Johnson 159

Safe Opening of Gas Works Plant, Code of Practice for (I.G.E. Safety Recommendation M12) 27

Safe Operation of Mechanical Handling Plant: R. W. Cutts (*a*) 149
Safety of Employees: Some Avenues for Research: B. J. Fuller 203
Discussion and Author's Reply 216
Safety Recommendations:
Amendment to M9 (Memorandum on Installations for Use of Light Petroleum Distillates in Low-pressure Gasification Plants) 24
Code of Practice for Safe Opening of Gas Works Plant (M12) 27
Selection and Training of Technical Staff: H. G. Phillips (*a*) 232
Some Examples of Conversions of Industrial Appliances to Gas Firing: G Holmes (*a*) 236
Some Experiences in Planning: E. O. Rose 764
Discussion and Author's Reply 777
South Eastern Gas Board, Central Laboratories of: G. H. Fuidge (*a*) 422
Space Heating, Experiences in New Applications of Gas for: N. R. Junkison *and* D. MacIntyre (*a*) 375
Special Speaker Address: E. Crowther (*a*) 379
Staff, Technical, Selection and Training of: H. G. Phillips (*a*) 232
Suitability of Polyvinylchloride for Pipes Carrying Town Gas: W. F. Gardner *and* I. Kalushner 184
Discussion and Authors' Reply 194

Tar Distilling Industry: C. E. Carey (*a*) 740
Technical Exercise in Functional Interdependence: P. G. Jackson *and* M. J. F. Olden (I.G.E. Silver Medal Award, 1961) 501
Abstract and Discussion 145
Textile Industry, Gas in: H. Hocking (*a*) 497
Town Gas in Glass Industry in South Lancashire Group of North Western Gas Board: K. D. Hooper (*a*) . . 308
Town Gas in Manufacture of Tubes: A. C. Jennings (*a*) 53
Training of Technical Staff, Selection and: H. G. Phillips (*a*) 232
Transfer, Use and Reforming of Butane: J. A. Ward (*a*) . 424
Transmission and Underground Storage, Long-distance: K. Bentz 565
Tubes, Town Gas in Manufacture of: A. C. Jennings (*a*) 53
Turbo-boosters Installed at Stretford Holder Station, Description and Comparison of Single and Multi-stage: K. R. Eaves (*a*) 237

Unaccounted-for Gas, Committee on, Report 23
Underground Storage, Long-distance Transmission and: K. Bentz 565
Use of Butane for Peak Loads at East Greenwich: J. C. Bailey (*a*) 424
Use of High-velocity Burners in High-temperature Furnaces. Tests on a Slot-type Forge Furnace: W. E. Francis, M. N. Lawrence, J. G. O'Connor *and* L. Walker 468
Discussion and Authors' Repiy 486
Use of Instruments in Production and Distribution of Gas: J. R. Kenward *and* T. A. Lucas (*a*) 144

Vice-President, 1962-64. *See* Branson, W. R.
Vote of Thanks for Presidential Address: J. H. Dyde . . 393

Warm-air Heating in Existing Houses, Experiences with Installing: F. S. Eames (*a*) 151
Warm-air Heating, Laboratory and Field Experience in: P. R. Chance *and* E. W. G. Dance 517
Water Tank of a Spiral-guided Gasholder, Repairing: K. J. Shewan (*a*) 238
Welfare on Works: I. F. Millar (*a*) 378
William Dieterichs Memorial Prize: 1961 Award . . . 399

INDEX OF AUTHORS

(*a*) indicates an abstract.

An Index of Participants in Discussions is given separately.

Bailey, J. C. Use of Butane for Peak Loads at East Greenwich (*a*) 424
Battersby, T. C. Presidential Address, 1962 388
Beale, P. A. A. *see* Densham, A. B. *and* Beale, P. A. A.
Bell, E. J. Incineration (*a*) 377
Bell, J. Getting Warmer (*a*) 55
Bentz, K. Long-distance Transmission and Underground Storage 565
Discussion and Author's Reply 591
Bone, M. R. Knowing our Markets (*a*) 374
Bonnans, H. *see* Watts, H. *and* Bonnans, H.
Brown, K. E. Chairman's Address, 1962 (I.G.E. North of England Section) (*a*) 496
Bruce, R. D. Gas-fueled Heat Services in Operation: Local Authority and Private Development Housing (*a*) 234
Buxton, H. F. Factors Influencing Choice of Motive Power (*a*) 373

Carey, C. E. The Tar Distilling Industry (*a*) 740
Chance, P. R. *and* Dance, E. W. G. Laboratory and Field Experience in Warm-air Heating (I.G.E. Bronze Medal Award, 1961) 517
Cheetham, H. S. (*Chairman*) *22nd* Report of the Chairmen's Technical Committee, 1960-61 16
Discussion and Chairman's Reply 37
Cole, G. F. Mine Gas as Constituent of Town Gas (*a*) 309
Collins, H. H., Gilbert, G. N. J. *and* Rew, R. Determination of Stresses in Buried Pipes 245
Discussion and Authors' Reply 270
Crowther, E. Special Speaker Address (*a*) 379
Cubbage, P. A. *and* Whiteside, J. L. Generation of Heat-treatment Atmospheres from Town Gas. Control of Lean Exothermic Atmospheres 86
Discussion and Authors' Reply 100
Cutts, R. W. Safe Operation of Mechanical Handling Plant (*a*) 149

Dance, E. W. G. *see* Chance, P. R. *and* Dance, E. W. G.
Densham, A. B. *and* Beale, P. A. A. Analysis of Oils for Gas Manufacture 349
Discussion and Authors' Reply 358
Dobson, H. and Partington, C. G. Business as (Un)usual (*a*) 378
Dunphy, T. E. O.N.I.A.-G.E.G.I. Plant in Cork . . . 749

Eames, F. S. Experience with Installing Warm-air Heating in Existing Houses (*a*) 151
Eaves, K. R. Description and Comparison of Single- and Multi-stage Turbo-boosters Installed at Stretford Holder Station (*a*) 237
Ellis, *Sir* C. The Research of the Gas Industry . . . 3
Discussion and Author's Reply 12
Ellis, J., Manuel, K. *and* Walker, L. Fifty Years of Industrial Gas in Birmingham 596
Discussion and Authors' Reply 621

Farror, R. M. Chairman's Address, 1962 (I.G.E. London and Southern Section) (*a*) 496

Francis, W. E., Lawrence, M. N., O'Connor, J. G. *and* Walker, L. Use of High-velocity Burners in High-temperature Furnaces. Tests on a Slot-type Forge Furnace 468
Discussion and Authors' Reply 486
Fuidge, G. H. Central Laboratories of South Eastern Gas Board (*a*) 422
Fuller, B. J. Safety of Employees: Some Avenues for Research 203
Discussion and Author's Reply 216

Gadd, J. Distribution Emergencies in Relation to Mains and Services (*a*) 796
Gardner, W. F. *and* Kalushner, I. Suitability of Polyvinylchloride for Pipes Carrying Town Gas . . 184
Discussion and Authors' Reply 194
Gilbert, G. N. J. *see* Collins, H. H., Gilbert, G. N. J. *and* Rew, R.
Gregg, R. J. Mind your own Business (*a*) 233

Haffner, A. E. (*Chairman*) *38th* Report of Gas Education Committee, 1960-61 67
Discussion and Chairman's Reply 82
Harris, J. A. *and* Wills, D. R. Domestic Heat Services in Occupied Houses 107
Discussion and Authors' Reply 127
Henshilwood, C. P. *and* Sharman, A. E. Forces in Meters 319
Discussion and Authors' Reply 337
Hilton, R. C. British Railways—Problem and Answer (*a*) 306
Hocking, H. Gas in Textile Industry (*a*) 497
Hodge, L. R. The Development of Modern Methods of Customer Service 715
Discussion and Author's Reply 729
Hodkinson, W. Allocation of Resources in Britain's Fuel Industries (*a*) 311
Holmes, G. Some Examples of Conversions of Industrial Appliances to Gas Firing (*a*) 236
Hooper, K. D. Town Gas in Glass Industry in South Lancashire Group of North Western Gas Board (*a*) . 308
Hoskin, R. E. P. Presidential Address, 1961 (Eastern Junior Gas Association) (*a*) 377
Huxtable, R. G. Address on Administration (*a*) . . . 627

Jackson, P. G. *and* Olden, M. J. F. Technical Exercise in Functional Interdependence (I.G.E. Silver Medal Award, 1961) 501
Abstract and Discussion 145
Jennings, A. C. Town Gas in Manufacture of Tubes (*a*) 53
Johnson, C. Gas Reservoirs in British Porous Rock Structures 159
Discussion and Author's Reply 178
Johnson, E. *see* Mills, C. E. *and* Johnson, E.
Junkison, N. R. *and* MacIntyre, D. Experiences in New Applications of Gas for Space Heating (*a*) 375

Kalushner, I. *see* Gardner, W. F. *and* Kalushner, I
Kenward, E. J. Managers, Methods and Productivity (*a*) 795
Kenward, J. R. *and* Lucas, T. A. Use of Instruments in Production and Distribution of Gas (*a*) 144
Kitson, A. M. *and* Prigg, J. A. Flash Tube Design . . 277
Discussion and Authors' Reply 298

Lawrence, M. N. *see* Francis, W. E., Lawrence, M. N., O'Connor, J. G. *and* Walker, L.
Lucas, T. A. *see* Kenward, J. R. *and* Lucas, T. A.

MacIntyre, D. *see* Junkison, N. R. and MacIntyre, D.
Manuel, K. Pattern of Development for Advancement of Industrial Gas Sales (*a*) 629
Manuel, K. *see* Ellis, J., Manuel, K. *and* Walker, L.
Meggitt, K. B. Chairman's Address, 1962 (I.G.E. Eastern Section) (*a*) 556
Millar, I. F. Welfare on Works (*a*) 378
Mills, C. E. *and* Johnson, E. Removal of Organic Sulphur Compounds from Town Gas 664
Discussion and Authors' Reply 674
Morris, J. E. *see* Vane, S. G. *and* Morris, J. E.

Nuttall, R. L. Place of Town Gas in Oxy-gas Cutting (*a*) 237

O'Connor, J. G. *see* Francis, W. E., Lawrence, M. N., O'Connor, J. G. *and* Walker, L.
Olden, M. J. F. *see* Jackson, P. G. *and* Olden, M. J. F.

Pardoe, T. H. Further Industrial Gas Developments in South West (*a*) 559
Parr, R. R. Remote Control and Indication at Blyth (*a*) 238
Partington, C. G. *see* Dobson, H. *and* Partington, C. G.
Patrick, E. A. K. Presidential Address, 1962. (L. & S. Junior Gas Association) (*a*) 798
Phillips, H. G. Selection and Training of Technical Staff (*a*) 232
Phillips, W. G. Development of the Gas Load . . . 637
Discussion and Author's Reply 657
Pickering, E. T. Chairman's Address, 1962 (I.G.E. Midland Section) (*a*) 421
Pickering, E. T. Production, Treatment and Disposal of Ammoniacal Liquors (*a*) 306
Porter, W. H. B. Distribution Design—Domestic Peak Loads (Medium and Small Dwellings) (*a*) 741
Prigg, J. A. *see* Kitson, A. M. *and* Prigg, J. A.

Rew, R. *see* Collins, H. H., Gilbert, G. N. J. *and* Rew, R.
Roberts, A. L. (*Chairman*) *52nd* Report of the Joint Refractories Research Committee, 1960-61 449
Discussion and Authors' Reply 462
Roberts, A. L. *and* Ward, C. P. Applications of Modern Analytical Techniques in Gas Industry: Part 1: Analysis of "Primary Flash Distillate" Feedstock, using Gas Chromatography 343
Discussion and Authors' Reply 358
Rose, E. O. Some Experiences in Planning 764

Scott, G. B. Retrospect on an American Visit (*a*) . . 151
Sharman, A. E. *see* Henshilwood, C. P. *and* Sharman, A. E.
Shewan, K. J. Repairing Water Tank of a Spiral-guided Gasholder (*a*) 238
Spiller, W. J. Initial Experience in Operation of M.S. Plant (*a*) 557
Stubbs, J. A. *and* Millington, J. The Catalytic Production of Town Gas at Crewe, using Primary Flash Distillate (*a*) 798

Thornton, E. Developments in Industrial Gas Utilization on Continent (*3rd* Dempster Travelling Fellowship Report) (Abridged) 429
Discussion and Author's Reply 445

Vane, S. G. *and* Morris, J. E. Reflections on the Continuous Catalytic Reforming of Butane by the Otto Process 689
Discussion and Authors' Reply 709

Walker, L. *see* Ellis, J., Manuel, K. *and* Walker, L.
Walker, L. *see* Francis, W. E., Lawrence, M. N., O'Connor, J. G. *and* Walker, L.
Ward, C. P. *see* Roberts, A. L. *and* Ward, C. P.
Ward, J. A. Transfer, Use and Reforming of Butane (*a*) 424
Watts, H. *and* Bonnans, H. Control and Installation of Gas Boosters and Compressors (*a*) 686
Whiteside, J. L. *see* Cubbage, P. A. *and* Whiteside, J. L.
Wills, D. R. *see* Harris, J. A. *and* Wills, D. R.
Wilson, N. J. District Supply by Means of Butane/Air Mixture (*a*) 237

INDEX OF PARTICIPANTS IN DISCUSSIONS

(*a*) indicates an abstract

Allan, P. D. 196
Andrew, L. W. 12, 657
Anson, R. S. 199
Ashton, J. (*a*) 378
Atkin, F. L. . . . 38, 195, 271, 623
Atterton, J. R. (*a*) 686

Badger, E. H. M. 40
Barson, A. G. (*a*) 628
Bath, D. J. O. (*a*) 145
Battersby, T. C. (*a*) 628
Beale, S. J. F. 462
Beavis, D. . . . . 236 (*a*), 729
Bell, R. F. (*a*) 236
Berrisford, H. G. . . . . 130, 724 (*a*)
Bishop, S. G. (*a*) 425
Blundell, L. W. (*a*) 740
Boardman, F. H. (*a*) 310, 629
Boot, H. L. G. 464, 761
Boreham, G. R. 358
Bouch, W. (*a*) 308
Bouch, W. E. . . . . 678, 686 (*a*)
Bowden, F. P. 337
Branson, W. R. 621, 731
Bridgens, J. L. 446
Brighton, C. A. 200
Brockbank, S. (*a*) 54, 310
Brookes, J. T. 660, 731
Brown, K. E. 272
Buckley, H. (*a*) 55
Buckley, — (*a*) 799
Buckley, J. A. . . . . 129, 375 (*a*)
Buist, F. T. . . . . 145 (*a*), 198
Bureau, A. C. 677
Burns, J. 445
Butler, D. J. (*a*) 797
Butler, J. D. (*a*) 376
Buttall, K. F. 361

Calvert, N. (*a*). 311
Canning, T. A. (*a*). 150
Carter, G. B. (*a*) 498
Castle, J. . . . . 234 (*a*), 659
Caunce, F. 83
Chalmers, G. F. 272
Charles, J. A. 339
Childs, L. (*a*) 152
Clark, L. J. 181, 373 (*a*), 628 (*a*), 779
Clarke, N. W. B. 273
Claxton, G. (*a*) 423
Cockerham, R. G. 361
Collinge, A. K. (*a*). 378
Cooper, J. E. 676
Coote, D. R. (*a*) 796
Copp, A. D. L. 592
Copping, A. H. (*a*) 377
Cormack, J. D. (*a*) 629
Cottrell, A. F. 781
Crick, G. C. G. (*a*) 799
Cronin, J. B. 217
Crowle, L. S. (*a*) 741, 742
Culshaw, G. W. 300
Currie, W. A. 220

Davis, J. E. . . . 14, 38, 100, 145 (*a*)
Davison, J. (*a*) 628
Dawson, F. (*a*) 310
Deavin, S. G. (*a*) 234
Delsol, R. 181
Densham, A. B. 180
Dent, F. J. 14
Dewhurst, J. R. 299
Dick, T. A. 359
Dobson, — (*a*) 800
Dobson, H. (*a*) 742
Dobson, W. E. (*a*) 310, 629
Dunning, E. W. B. . . . 299, 628 (*a*)
Duthie, J. B. 463
Dyde, J. H. 37, 777

Earle, N. G. (*a*) 310
Eaton, F. J. (*a*) 423
Edwards, E. J. (*a*) 796
Ellis, J. . . . . 103, 630 (*a*)
Everard, S. (*a*) 375, 795

Fairman, J. R. (*a*) 425
Falcon, N. L. 178
Farrow, N. H. 360
Ferguson, D. (*a*) 310, 630
Finlayson, P. C. 487
Fitton, G. 661
Fitzgerald, F. 487
Foxton, J. (*a*) 147
Francombe, K. W. 14, 308 (*a*), 678, 712
Fraser, R. A. 678
Freeland, F. L. 338
Fuidge, G. H. . . . 274, 298, 741 (*a*)
Fuller, B. J. . . . . 731, 378 (*a*)
Fulton, J. H. (*a*) 236

Gamper, A. J. (*a*) 374
Garrett, W. R. 594
Gibson, T. W. 196
Golding, I. L. S. 101
Goodier, K. 198
Graham, A. D. 84
Grant, A. F. (*a*) 145
Greaves, R. L. (*a*) 234
Gregory, S. A. 101
Grey, J. E. (*a*) 797
Grocott, F. (*a*) 306
Groom, R. D. (*a*) 377

Haffner, A. E. 179, 233 (*a*), 447, 591, 760
Haines, D. P. 677, 780
Hall, D. A. (*a*) 307
Hamlyn, D. W. (*a*) 799
Hammond, D. H. P. (*a*) . . 147, 376
Hare, N. (*a*) 379
Harrison, W. B. (*a*) 234
Harvey, F. . . . . 39, 54 (*a*)
Hawes, J. M. 760
Hawkings, B. G. H. J. . . 310, 311, 630
Hawkins, A. R. 710
Hawthorn, S. K. 709
Hayman, R. F.
53 (*a*), 84, 447, 628 (*a*) 659
Hazeldene, C. D. (*a*) 152
Hemingway, C. W. (*a*) 378
Henderson, N. (*a*) 686
Henebery, J. (*a*) 742
Henshilwood, C. P. (*a*) 151, 797, 798
Hicks, — (*a*) 235
Higgs, A. 104, 488
Hirst, T. B. V. . . . 40, 151 (*a*), 340
Hocking, H. (*a*) 309
Hoffman, — (*a*) 724
Hoggarth, M. L. 299
Holden, A. H. 102
Hopton, G. U. 12, 180
Hoskin, R. E. P. (*a*) 378
Houston, W. T. (*a*) 151
Howell, W. F. (*a*) . . . 309, 497, 742
Hoyle, N. (*a*) 152
Hubbard, E. H. 488
Hudson, N. 127
Hughes, F. 301

Jackson, T. W. 195
Jenkins, *Sir* Gilmour (*a*) 795
Jennings, A. C. . . . 488, 623, 629 (*a*)
Johnson, C. 593
Johnson, F. J. (*a*) 53
Johnson, G. E. (*a*) 151
Johnson, R. S. 674
Jones, A. Rees 298
Jones, D. R. (*a*) 148
Jones, H. H. 301
Jones, R. A. (*a*) 425
Jones, S. (*a*) 54
Joyce, W. G. (*a*) 797

Kay, D. W. (*a*) 379, 799
Kenward, E. J. 130
Kenward, J. R. (*a*) 423
Kenwood, E. J. (*a*) 375
Kenyon, G. H. (*a*) 233
Kilvert, J. R. 712
King, S. A. (*a*) 375
Kirkcaldy, J. L. R. 85

Lake, F. 661
Law, J. E. 730
Leonard, L. G. A. 445
Lewis, C. H. . . . . 145 (*a*), 361
Lewis, J. T. (*a*) 636
Lindgren, C. 761
Lock, H. W. (*a*) 377
Lord, J. K. (*a*) 497
Lowe, J. A. 488
Lush, L. A. (*a*) 630

McCrae, R. J. (*a*) 233
McFadyen, A. (*a*) 235
McNeil, D. 359
Madge, G. H. W.
341, 375 (*a*), 628 (*a*), 732, 795 (*a*)
Maplethorpe, K. E. (*a*) 377
Marshall, A. (*a*) 377
Mather, — (*a*) 799
Matthew, J. R. (*a*) 686
Matthew, R. (*a*) 55
Maunder, D. J. (*a*) 145
Medhurst, — (*a*) 151
Messenger, E. I. 675
Mew, W. M. P. (*a*) 797
Millington, — (*a*) 799
Milner, G. 465, 762
Minchin, L. T. . . . . 301, 796 (*a*)
Moys, H. W. (*a*) 233

Nellist, G. R. (*a*) 308
Newey, P. M. (*a*) 375
Newling, W. B. S. 677
Newman, H. C. (*a*) 54
Norton, R. L. (*a*) 425
Nuttall, H. B. (*a*) 686

Olden, M. J. F. 463
Oldham, W. (*a*) 310

Palmer, A. G. 220
Pardoe, T. H. 486
Parker, A. 594
Paterson, W. M. R. (*a*) 311
Patrick, E. A. K. . . . 103, 795 (*a*)
Perrin, A. J. (*a*) 152
Peterson, G. A. 623
Phillips, W. G. 730

Picken, R. N. 274
Pickering, E. T. 39
Porter, S. C. 40
Potter G. H. 84
Prigg, J. A. 101
Pritchard, W. F. (*a*) 233
Purkis, C. H. 301
Purslow, T. (*a*) 310
Pykett, F. (*a*) 234

Rampton, H. C. 360
Randall, L. F. 82, 658
Rea, A. C. (*a*) 148
Richards, R. O. (*a*) 308
Richardson, B. (*a*) 307
Ricketts, T. S. (*a*) 235
Rigg, J. V. (*a*) 423, 797
Rimmer, G. M. (*a*) 374
Roberts, A. L. 13
Robertshaw, G. W. (*a*) 309
Rogers, J. W. (*a*) 234
Rolfe, L. H. 339
Roper, L. M. 624
Rose, D. G. (*a*) 375
Rose, E. O. 218, 710
Rooke, D. E. 778
Ryder, C. 13

Sanders, F. A. 221
Santo, B. (*a*) 378
Savage, P. J. (*a*) 425
Savill, A. H. (*a*) 233, 423
Scott, D. W. G. (*a*) 147, 376
Scott, G. B. 592
Searle, A. F. (*a*) 310, 630
Shaw, H. P. 219
Sheldon, E. (*a*) 55
Simmonds, W. A. 622
Simmons, A. 219
Skinner, S. N. (*a*) 145
Small, P. A. 197
Smirles, W. N. 104
Smith, R. B. (*a*) 799, 800
Smith, R. B. J. (*a*) 148
Smith, R. L. (*a*) 377
Spencer, A. (*a*) 310
Stanton, V. W. (*a*) 375
Steel, J. E. (*a*) 797
Steele, K. A. . . . . 102, 145 (*a*)
Stewart, — (*a*) 235
Stewart, E. G. (*a*) 425
Stewart, S. A. (*a*) 741
Sugg, P. Crawford 131, 660
Summersgill, K. (*a*) 741, 742

Taylor, E. E. (*a*) 377
Taylor, H. B. (*a*) 54
Taylor, J. B. 221
Taylor, R. (*a*) 55
Teale, J. R. (*a*) 152, 309, 498
Teasdale, H. 83
Thomas, — (*a*) 497
Thomas, G. E. 105
Thompson, R. J. S. 676
Thorne, W. F. . . . . 201, 422 (*a*)
Thornton, E. (*a*) 151
Thring, M. W. 446, 486
Tinsley, — (*a*) 497
Towler, J. H. 359
Townsend, C. H. (*a*) 151, 628
Townsend, J. W. (*a*) 375
Turner, A. R. (*a*) 377
Tweedle, F. (*a*) 146
Twist, R. F. (*a*) 741

Valentine, A. C. (*a*) 374

Wainwright, A. V. (*a*) . . . 629, 630
Walker, L. (*a*) 630
Walters, W. J. (*a*) 425
Ward, J. (*a*) 309, 497
Ward, T. 446
Warne, G. G. . . . . 275, 796 (*a*)
Watson, D. 487
Watson, T. C. B. 129
West, A. R. 362
Wharton, R. H. (*a*) 797
White, L. J. 466
Whitehead, A. E. (*a*) 497
Whitehead, P. J. (*a*) 147
Wills, D. R. (*a*) 423
Wood, B. (*a*) 628
Woodall, J. D. C. (*a*) . . . 375, 796
Woolfenden, D. G. 216
Wright, M. (*a*) 55
Wright, S. L. 219, 711

Yeaman, A. G. D. . . . 148 (*a*), 362